LISTING OF THE CLAIMS:

Claim 1 (Withdrawn) A method for changing an array comprising the steps of:

changing a variable in a target array to information that represents the location of a different variable when said target array, consisting of a combination of a plurality of various kinds of elements is viewed along a path extending in a predetermined direction, and when a different, complementary variable is present upstream of a variable included in said target array;

changing said variable to information indicating that no different, complementary variable is present when no different, complementary variable is present upstream of said variable in said target array; and

repeating said steps for all the other variables included in said target array, so that said target array is changed.

Claim 2 (Cancelled).

Claim 3 (Withdrawn) The method according to claim 2, wherein a single suffix tree is prepared while said first and said second arrays are regarded as a single pair of corresponding character strings;

wherein, from among sequences of said first and said second arrays, which are provided as labels for edges of said single suffix tree, information that indicates the location of said same variable or said different variable that is not present in each of said sequences is replaced with information that indicates the absence of said same variable or said different variable; and

wherein said suffix tree is employed to analyze the structure of said target array.

Claim 4 (Withdrawn) The method according to claim 2, wherein said target array is changed to said first and said second arrays by using, as information that indicates the position of the different variable or the position of said same variable, numerical information that represents the number of elements arranged in said target array beginning at the position of a target variable and continuing up to the position of said same variable, or said different variable;

wherein, for said first and said second thus obtained arrays, all of said information indicating that said different variable or said same variable is not present in said target array is replaced with numerical information, obtained by inverting the positive and negative signs of said numerical information, indicating the number of elements that are present in another array at locations corresponding to said information;

wherein a suffix tree is prepared by regarding the obtained array as a character string; and

wherein, among the sequences of said obtained array that are provided as labels for edges of said suffix tree, numerical information indicating the positioning of said same variable or said different variable that is not present in each of said sequences is replaced with information indicating that said same variable or said different variable is not present; and

wherein said suffix tree is employed to analyze the structure of said target array.

Claim 5 (Withdrawn): The method according to claim 3, wherein said suffix tree is employed to extract a sequence that has the same structure and that frequently appears in said target array, so that said structure of said target array is analyzed.

Claim 6 (Withdrawn) The method according to claim 4, wherein said suffix tree is employed to extract a sequence that has the same structure and that frequently appears in said target array, so that said structure of said target array is analyzed.

Claim 7 (Withdrawn) The method according to claim 3, wherein said target array is an array where said first target array, first identification information, said second target array, first identification information, said second target array and second identification information are arranged in order; and wherein, when said suffix tree is employed to search for said common sequence for said first and said second arrays, said structures of said first array and said second array are analyzed.

Claim 8 (Withdrawn) The method according to claim 4, wherein said target array is an array where said first target array, first identification information, said second target array, first identification information, said second target array and second identification information are arranged in order; and wherein, when said suffix tree is employed to search for said common sequence for said first and said second arrays, said structures of said first array and said second array are analyzed.

Claim 9 (Withdrawn) An apparatus for analyzing the structure of an array comprising:

first conversion means for converting a target array consisting of a combination of a plurality of different kinds of elements into a first array by changing a variable that is replaceable with another element in said target array into information representing the location of the same variable when said target array is viewed along a path extending in a predetermined direction,

and when said same variable is present upstream of said variable, and by changing, when said same variable is not present upstream of said replaceable variable in said target array, all the variables in said target array into information indicating that said same variable is not present;

second conversion means for changing said target array into a second array by changing a replaceable variable in a target array into information representing the location of the different variable when said target array is viewed along a path extending in a predetermined direction, and when a different variable that is complementary is present upstream of said replaceable variable and by changing, when said different variable is not present upstream of said replaceable variable in said target array, all the variables in said target array into information indicating that said different variable is not present; and

analyzation means for employing said first and said second arrays to analyze the structure of said target array.

Claim 10 (Withdrawn) A storage medium on which a program is stored to permit a computer to perform processing comprising:

a step of converting a target array consisting of a combination of a plurality of different kinds of elements into a first array by changing a variable that is replaceable with another element in said target array into information representing the location of the same variable when said target array is viewed along a path extending in a predetermined direction, and when said same variable is present upstream of said variable, and by changing, when said same variable is not present upstream of said replaceable variable in said target array, all the variables in said target array into information indicating that said same variable is not present;

a second step of changing said target array into a second array by changing a replaceable variable in a target array into information representing the location of the different variable when said target array is viewed along a path extending in a predetermined direction, and when a different variable that is complementary is present upstream of said replaceable variable, and by changing, when said different variable is not present upstream of said replaceable variable in said target array, all the variables in said target array into information indicating that said different variable is not present; and

a third step of employing said first and said second arrays to analyze the structure of said target array.

Claim 11 (Withdrawn) A transmission medium for transmitting a program to permit a computer to perform processing comprising:

a step of converting a target array consisting of a combination of a plurality of different kinds of elements into a first array by changing a variable that is replaceable with another element in said target array into information representing the location of the same variable when said target array is viewed along a path extending in a predetermined direction, and when said same variable is present upstream of said variable, and by changing, when said same variable is not present upstream of said replaceable variable in said target array, all the variables in said target array into information indicating that said same variable is not present;

a second step of changing said target array into a second array by changing a replaceable variable in a target array into information representing the location of the same variable when said target array is viewed along a path extending in a predetermined direction, and when a different variable that is complementary is present upstream of said replaceable variable, and by

changing, when said different variable is not present upstream of said replaceable variable in said target array, all the variables in said target array into information indicating that said different variable is not present; and

a third step of employing said first and said second arrays to analyze the structure of said target array.

Claim 12 (Cancelled).

Claim 13 (New) A method for analyzing the data structure of a target array consisting of a plurality of elements, the method comprising the steps of:

generating a first array of elements corresponding to the target array, including the steps of:

i) traversing the elements of the target array I a defined order, and

ii) for each of the elements of the target array, (1) determining if the same element is present earlier in the target array, (2) if said same element is present earlier in the target array, replacing said each element, in the first array, with information indicating the location in the target array of said same element, and (3) if said same element is not present earlier in the target array, placing information in the first array indicating that said each element is not present earlier in the target array,

generating a second array of elements corresponding to the target array, including the steps of:

i) traversing the elements of the target array in a given order, and

iii) for each of the elements of the target array, (1) determining if a complement of said each element is present earlier in the target array, (2) if said complement is present earlier in the target array, replacing said each element, in the second array, with information indicating the location in the target array of said complement, and (3) if said complement is not present earlier in the target array, placing information in the second array indicating that said complement is not present earlier in the target array, and

analyzing the structure of the target array by using the first array and the second array.

Claim 14 (New) A method for analyzing the data structure of a target array including a plurality of different elements, the method comprising the steps of:

(a) generating a first array having elements corresponding to the elements of the target array by (i) traversing the target array in a predetermined direction, (ii) replacing in the first array a corresponding first occurrence of each element in the target array with information that indicates that said first occurrence is the first occurrence of said each element, and (iii) replacing in the first array each corresponding subsequent occurrence of each element in the target array with information that represents a location of the subsequent occurrence of each element in the target array relative to a prior occurrence of each element in the target array;

(b) generating a second array having elements corresponding to the elements of the target array by (i) traversing the target array in a predetermined direction and replacing in the second array a corresponding first occurrence of each element in the target array with information that indicates that said first occurrence is the first occurrence of said each element,

(ii) replacing in the second array a corresponding next occurrence of an element in the target array that is a given complement to said first occurrence of said each element with information that represents a location of said next occurrence in the target array relative to the first occurrence of said each element, and (iii) replacing in the second array each corresponding subsequent occurrence of an element in the target array having a previous occurrence of the given complement of said element with information that represents a location of said subsequent occurrence of the element relative to the previous occurrence of said given complement; and

(c) analyzing the structure of the target array by using the first array and the second array.